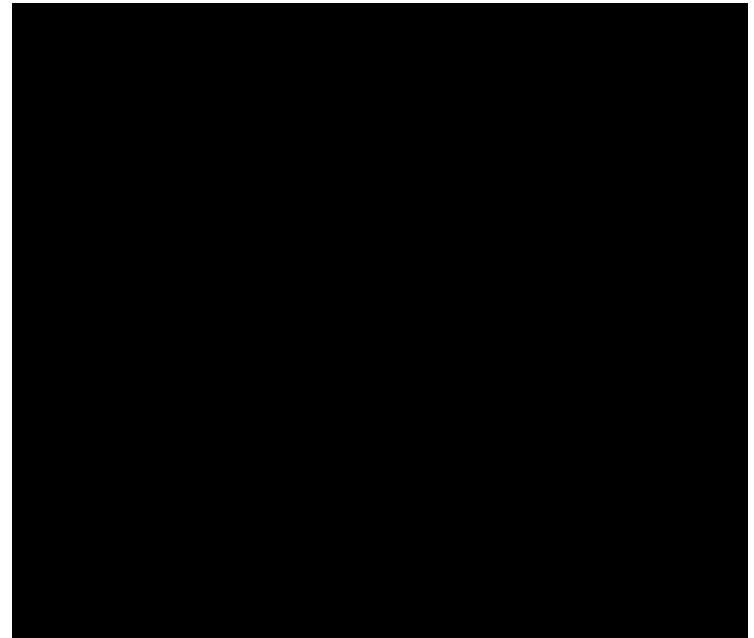


Burrowing Owl Ecoregional Research Across Great Plains National Grasslands

- Current & Pending Support
- Current Project Overview
- Future Directions
- Questions



Cooperative Program

After this season: 54 undergraduate, 5 graduate students



Universidad Autónoma de Chihuahua
New Mexico State University
USDA, Forest Service

Grant Proposals

- *Funded*

Student Experiential Learning in a Multicultural Environment Through Agency Internships and an International Exchange Program - USDA Hispanic Serving Institutions Program - \$350,000

- *Submitted*

Source-sink dynamics in burrowing owl populations across Great Plains prairie dog colonies: implications for owl and livestock management- \$500,000

Four Study Areas with 356 Nests Monitored

(standardized approach across grasslands)

- Kiowa and Rita Blanca National Grasslands
(12 prairie dog colonies, 68 nests)
- Comanche National Grassland
(12 prairie dog colonies, 86 nests)
- Pawnee National Grassland
(14 prairie dog colonies, 104 nests)
- Buffalo Gap National Grassland
(17 prairie dog colonies (some quadrats), 98 nests)



Summary of Results 2006

- Significantly higher nest failure in the south (44 and 30% compared to 9 and 14%).
- Significantly higher productivity at the 2 northern sites ($F_{352,3} = 21.553$, $P = 0.00$).
- Sig. differences in nest spacing among sites ($F_{3, 347}$, $P = 14.48$).
- Higher productivity at supplemented nests for 3 of 4 sites ($F = 12.77$, $P = 0.00$).

Fledging Success per Pair 2006 (5-6 weeks of age)

- Kiowa-Rita Blanca – 1.7 chicks/pair
- Comanche – 2.4 chicks/pair
- Pawnee – 4.2 chicks/pair
- Buffalo Gap – 3.5 chicks/pair

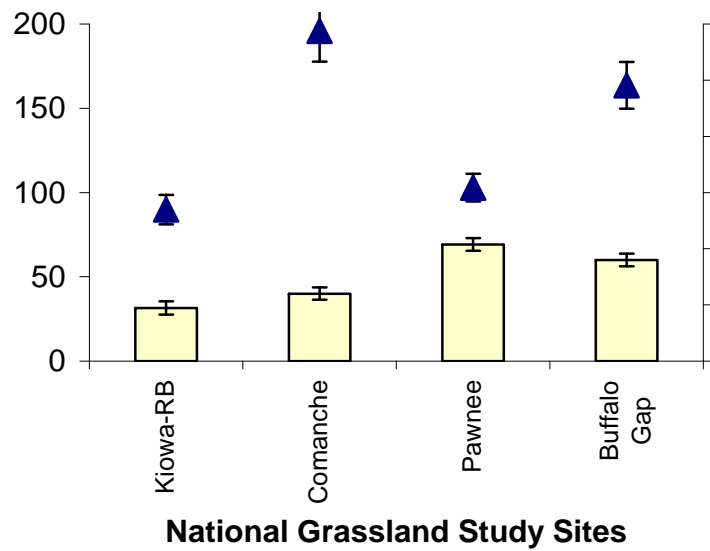


Table 1. Burrowing owl occupancy rate, nearest-neighbor (NN) distance and productivity/nest in prairie dog colonies arranged latitudinally from North to South. Dash lines indicate data was not available.

Site	Occupancy Rate (%)	\bar{X} NN Dist. (m)	Productivity (fledgling/nest)	Reference
Montana	16	220	2.6	Restani et al. 2001
North Dakota	22-49	430	3.4, 3.6	Restani et al. 2001
South Dakota	72	266, 296	2.6	Savidge pers. comm.
This study	100	164	3.5	Desmond unpubl.
Colorado	80	--	--	Orth & Kennedy 2001

Future Directions

- Large scale mark-recapture (bands, petagial wingtags, geolocators)
- Use combination of Stable Isotope Data and Mark-recapture to estimate adult and juvenile survival
- Continue intensive productivity studies
- Create a large scale GIS database that links productivity to local and landscape factors

Future Directions - Graduate Students

- MS student in wildlife ecology –SIA to examine owl movements (NMSU)
- PhD student Wildlife ecology – combine Mark-Recapture and SIA to estimate survival (NMSU)
- MS Student – Geography – examine owl productivity in relation to GIS database (NMSU)
- MS Student – wildlife ecology – examine owl productivity in relation to GIS database (UACH)

Expected Impact

- Improve the management of BUOW populations in prairie dog systems and provide recommendations to USDA Forest Service- sustainable management of GP NG
- Increased student retention and academic performance
- Successful career paths of students enrolled in the program
- Increased collaboration/communication among the USDA FS, NMSU and UACH
- Institutionalize and expand the exchange program between NMSU and UACH

Questions

